What is claimed is:

1. A method of embossing a sheet material, the method comprising:

pressing a patterned tool against the sheet; and

while maintaining the pressing, radiantly heating the sheet, using near-infrared radiant energy from a radiant energy source;

wherein the radiantly heating includes passing the radiant energy through a relatively radiantly-transparent material in contact with the sheet.

2. The method of claim 1, wherein the radiantly-transparent material includes at least part of the tool.

3. The method of claim 2, wherein the tool is a quartz tool.

4. The method of claim 1, wherein the radiantly-transparent material is at least a part of a roller that contacts the sheet.

5. The method of claim 4, wherein the radiantly-transparent material surrounds the radiant energy source.

6. The method of claim 4, wherein the roller is interposed between the radiant energy source and the sheet.

7. The method of claim 6, wherein the radiantly heating includes focusing of the radiant energy by the roller.

8. The method of claim 1, wherein the radiant energy source includes a blackbody emitter, wherein the blackbody emitter has a temperature of at least 2000 K.

9. The method of claim 1, wherein the sheet material is an oriented material that maintains its oriented character throughout the embossing.

10. A method of embossing a sheet material, the method comprising:

radiantly heating a relatively radiantly-absorptive portion of the sheet, using radiant energy from a radiant energy source;

pressing a patterned tool against the relatively radiantly-absorptive portion of the sheet, wherein the pressing includes patterning a surface of the sheet; and

separating the tool from the surface;

wherein the heating includes passing the radiant energy through a relatively radiantly-transparent portion of the sheet before absorbing the radiant energy in the relatively radiantly-absorptive portion of the sheet; and

wherein the relatively radiantly-transparent portion has a lower absorptivity of the radiant energy than does the relatively radiantly-absorptive portion.

11. The method of claim 10,

wherein the radiantly heating, the pressing, and the separating, are all performed as parts of a roll-to-roll process; and

wherein the tool is part of a patterned belt that includes a patterned tool surface and a flexible backing.

12. The method of claim 10,

wherein the radiantly heating, the pressing, and the separating, are all performed as parts of a roll-to-roll process; and

wherein the radiantly heating includes passing the radiant energy through a radiantly-transparent roller.

13. The method of claim 12, wherein the passing the energy through the roller includes focusing the radiant energy.

14. The method of claim 10, wherein the portions of the sheet both include a radiantly-transparent material, and wherein the relatively radiantly-absorptive portion includes a dopant that increases radiant absorptivity.

15. The method of claim 14, wherein the dopant is substantially-uniformly distributed within a surface layer of the sheet.

16. The method of claim 14, wherein the dopant is distributed in a non-uniform pattern within a surface layer of the sheet.

17. The method of claim 10, wherein the portions of the sheet include different materials.

18. The method of claim 10,
further comprising, prior to the heating, forming the sheet;
wherein the forming includes unevenly doping the sheet with a dopant.

19. The method of claim 18, wherein the unevenly doping includes coating a surface of the sheet with the dopant.

20. The method of claim 18, wherein the unevenly doping includes impregnating a surface of the sheet with the dopant.

21. The method of claim 18, wherein the doping includes patterned doping.

22. The method of claim 10,
further comprising, prior to the heating, forming the sheet;
wherein the forming includes coating a surface of the sheet with a dopant.

23. The method of claim 10,
further comprising, prior to the heating, forming the sheet;
wherein the forming includes co-extruding the portions of the sheet material.

24. The method of claim 10, wherein the heating includes reflecting at least part of the radiant heat off of a reflector.

25. The method of claim 24, wherein the heating includes unevenly heating the sheet, wherein the unevenly heating is due at least in part to uneven distribution of the dopant within the sheeting.

26. The method of claim 10, wherein radiantly heating includes melting at least part of the relatively radiantly-absorptive portion of the sheet.

27. The method of claim 10, wherein radiantly heating includes softening at least part of the relatively radiantly-absorptive portion of the sheet.

28. The method of claim 10, wherein the pressing the patterned tool against the sheet commences prior to the radiantly heating.

29. The method of claim 10, wherein the sheet material is an oriented material that maintains its oriented character throughout the embossing.

30. The method of claim 10,
further comprising, after the heating, cooling the sheet;
wherein the cooling occurs prior to the separating.

31. The method of claim 10, wherein the radiant energy source includes a blackbody emitter wherein the blackbody emitter has a temperature of at least 2000 K.

32. The method of claim 10, wherein the tooling includes a reflective material, and wherein the heating includes passing at least some of the radiant energy through the sheet a second time, after reflection off the reflective material.

33. The method of claim 10, wherein the pressing includes pressing patterned tools against opposite major surfaces of the sheet.

34. The method of claim 10, wherein the sheet material has a layered structure that is maintained during the heating and the pressing.

35. The method of claim 10, wherein the heating and the pressing overlap in time.

36. The method of claim 10, wherein the sheet material is constrained between belts during the heating and the pressing.

37. A method of embossing a sheet material, the method comprising:

heating a patterned tool, using radiant energy from a radiant energy source;

pressing the patterned tool against a surface of the sheet, thereby patterning the surface of the sheet; and

separating the tool from the surface;

wherein the sheet material is relatively radiantly transparent;

wherein the heating includes passing the radiant energy through the sheet before absorbing the radiant energy in the patterned tool; and

wherein the sheet material has a lower absorptivity, relative to an absorptivity of the patterned tool.

38. The method of claim 37, wherein the radiantly heating, the pressing, and the separating, are all performed as parts of a roll-to-roll process.

39. The method of claim 37, wherein the pressing the patterned tool against the sheet commences prior to the radiantly heating.

40. The method of claim 37,

further comprising, after the heating, cooling the sheet;

wherein the cooling occurs prior to the separating.

41. The method of claim 37, wherein the radiant energy source includes a blackbody emitter, wherein the blackbody emitter has a temperature of at least 2000 K.

42. The method of claim 37,

wherein the heating further includes passing the radiant energy through a relatively radiantly transparent roller; and

wherein the passing the energy through the roller includes focusing the radiant energy.

43. The method of claim 37,

further comprising heating an additional patterned tool using the radiant energy from the radiant energy source;

wherein the heating the additional patterned tool includes directly heating the additional patterned tool without passing the radiant energy through the sheet material.

44. The method of claim 37, wherein the sheet material is an oriented material that maintains its oriented character throughout the embossing.

45. The method of claim 37, wherein the pressing includes pressing patterned tools against opposite major surfaces of the sheet.

46. The method of claim 37, wherein the sheet material has a layered structure that is maintained during the heating and the pressing.

47. The method of claim 47, wherein the heating and the pressing overlap in time.

48. The method of claim 37, wherein the sheet material is constrained between belts during the heating and the pressing.

49. An embossing system, comprising:

a plurality of rollers, arrayed on opposite sides of a passage for receiving therein a sheet material to be embossed;

a radiant heater operatively configured to heat the sheet material while in the passage; and

a patterned belt in the passage, for patterning the sheet material.

50. The system of claim 49,

wherein the radiant heater includes radiant energy sources; and

wherein the radiant heater further includes one or more reflectors operatively coupled to the at least some of the radiant energy sources, to thereby direct radiant energy from the radiant energy sources to the passage.

51. The system of claim 50,

wherein in radiant energy sources and the reflectors are in at least some of the rollers; and

wherein the at least some of the rollers include radiantly-transparent roller material that allows radiant energy from the radiant energy sources to pass therethrough.

52. The system of claim 49,

wherein in radiant energy sources are in at least some of the rollers; and

wherein the at least some of the rollers include radiantly-transparent roller material that allows radiant energy from the radiant energy sources to pass therethrough.

53. An embossing system, comprising:

a pair of belts arrayed on opposite sides of a passage for receiving therein a sheet material to be embossed; and

a radiant heater operatively configured to heat the sheet material while in the passage.

54. The system of claim 53,

wherein one of the belts includes a radiantly-transparent material; and

wherein the radiant heater is configured to pass radiant energy into the passage through the radiantly-transparent material.

55. The system of claim 54, wherein the other belt includes a radiantly-absorptive material.

56. The system of claim 53,

wherein the radiant heater includes:

at least one radiant energy source that produces radiant energy; and

at least one reflector; and

wherein the at least one radiant energy source and the at least one reflector are configured such that the at least reflector directs at least some of the radiant energy toward the passage.

57. An embossing system, comprising:

a pair of press platforms configured to press a sheet material therebetween; and

a radiant heater configured to deliver radiant energy between the press platforms.

58. The system of claim 57,

wherein one of the press platforms includes a radiantly-transparent material; and

wherein the radiant heater is configured to pass the radiant energy through the radiantly-transparent material.

59. The system of claim 57, further comprising a pressure-producing device operatively coupled to the press platforms to press the platforms together.

60. A method of embossing a sheet material, the method comprising:

radiantly heating the sheet material, using radiant energy from a radiant energy source; and

pressing patterned tools against opposite major surfaces of the sheet material.

61. The method of claim 60, wherein the heating and the pressing overlap in time.

62. The method of claim 61, wherein the pressing commences before the heating.

63. The method of claim 60,

wherein the pressing includes pressing with a pair of patterned belts on opposite sides of the sheet material;

wherein the sheet material is constrained by the belts during the heating.

64. The method of claim 60, wherein the sheet material has a layered structure having multiple layers of different materials, and wherein the layered structure is maintained during the heating and the pressing.

65. The method of claim 60, wherein the radiant energy source includes a blackbody emitter, wherein the blackbody emitter has a temperature of at least 2000 K.